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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/821,563	03/29/2001	Dean Rosales	ITL.0536US (P10841)	5880

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EXAMINER	
TUCKER, WESLEY J	

ART UNIT	PAPER NUMBER
2624	

MAIL DATE	DELIVERY MODE
03/05/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/821,563	ROSALES, DEAN	
	Examiner	Art Unit	
	WESLEY TUCKER	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 May 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *29 March 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Applicant's response to reopen prosecution filed January 21st 2009 has been entered and acknowledged. The amendment filed January 21st has also been received and entered.

2. Prosecution is hereby re-opened and finality withdrawn in response to the remand form the Board of Appeals filed May 6th 2009.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1,9, 11, and 19 are rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure, which is not enabling. The method of "simultaneously determining" filters is critical or essential to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure. See *In re Mayhew,* 527 F.2d 1229, 188 USPQ 356 (CCPA 1976). It is unclear from the disclosure of the specification as to how different filters are determined both simultaneously as stated in claims 1,9, 11, and 19 and progressively as stated in claims 4, 10, 14, and 20. Please clarify how filters are determined simultaneously.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1, 11 and 21 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps are: a step or steps to disclose how two filters are determined. The claims consist of two steps: receiving image data and determining filters. There is no step to describe how such filters are calculated. Furthermore, since the step of receiving image data is only preliminary, the method seems to be a single step method with the only step being determining filters. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 4, 8-11, 14, and 18-20 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 6,535,632 to Park.

With regard to claim 1, Park discloses the method comprising: receiving image data; and simultaneously determining at least two filters of different sizes from

said data (Fig. 6, elements K1-K4). Here Park illustrates four different filter kernel sizes for performing filtering in an image.

With regard to claim 4, Park discloses the method of claim 1 including progressively calculating filters from smaller to larger sizes (Fig.6, elements K1-K4).

With regard to claim 8, park discloses the method of claim 1 including calculating at least two filters for a first pixel among said image data (Fig. 6) and then calculating a filter for an adjacent pixel. Park discloses a plurality of different kernel filters to be used depending on the characteristics of the pixel and that area of the image, then a new filter kernel is selected for each pixel (see abstract).

With regard to claim 9, Park discloses the method of claim 1 including simultaneously generating at least three filters of different sizes (Fig. 6).

With regard to claim 10, Park discloses the method of claim 1 including successively calculating filters of progressively larger size (Fig. 6).

With regard to claim 11, Park discloses software and hardware to be used in an image signal processor. It is clear that Park's invention is to be implemented in an article comprising: a medium storing instructions that enable a processor-based system to: receive image data; and simultaneously determine at least two filters of different sizes from said data.

The discussions for claims 1,4, and 8-10 apply to claims 11, 14, and 18-20 respectively.

Claim Rejections. 35 U$C § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 2, 3, 5, 12, 13, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of U.S. Patent 6,536,632 to Park et al. and U.S. Patent 5,027,423 to Kawata et al.

With regard to claims 2 and 3, Park discloses the method of claim 1 wherein receiving data includes receiving a matrix of data having rows and columns (Fig. 8A). Park does not disclose reducing the number of rows and reducing the number of columns by adding rows and columns together. Kawata discloses a circuit device that adds symmetrical rows in an image window in order to reduce the computation necessary for computing a filter (see abstract). Kawata teaches that it is desirable to add rows and columns together in order to reduce data to be processed by a multiplying section of the circuit thus reducing the number of multipliers and the cost of manufacturing such a circuit (column 10, lines 1-10). Therefore it would have been obvious to one of ordinary skill in the art to add rows and columns of pixels together in order to reduce computation and cost as taught by Kawata in calculating filters in the method of Park.

With regard to claim 5, Park discloses the method of claim 4 including receiving image data values. Park does not disclose adding the values together, and multiplying the values by convolution coefficients. Kawata discloses adding values together and multiplying them by corresponding coefficients (see abstract).

With regard to claims 12, 13, and 15 the discussion of claims 2, 3, and 5 applies.

7. Claims 6 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of U.S. Patent 6,536,632 to Park et al. and U.S. Patent 5,027,423 to Kawata et al. and further in view of U.S. Patent 5,351,312 to Sato. 20.

With regard to claim 6, Park discloses calculating filters of different sizes (Fig. 6). Kawata discloses performing additions and multiplications. Park and Kawata do not disclose reusing the results of said additions and multiplications calculated for one filter size, when calculating a filter of a larger size as claimed in claim 5. Sato discloses reusing the results of the additions and multiplications (column 7, lines 30-35). Here Sato discloses calculating a filtered pixel value and image signal and then shifting the filter to the next pixel of interest. The result of the adding and multiplication is therefore used in the subsequent filter calculation. Park discloses calculating filters of different sizes and Kawata discloses the adder and multiplier method. It would be advantageous to change the size of the filter while retaining the calculations of multiplying and adding from the previous filter calculation to maintain continuity between filtering operations. Therefore it would have been obvious to one of ordinary skill in the art to retain the calculations of one filter when calculating a new filter of another size as taught by Sato to maintain continuity and decrease processing time in the method of filter calculation of Park and Kawata.

With regard to claim 16, the discussion of claim 6 applies.

8. Claims 7 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of U.S. Patent 6,535,632 to Park et al. and U.S. Patent 5,351,312 to Sato et al.

With regard to claim 7, Park discloses the method of claim 1 including receiving data values in rows and columns. Park does not disclose adding together data values along diagonals. Sato discloses adding pixel values along diagonals (column 7, lines 25-30). Adding pixels along a diagonal would be helpful in determining the relationship between the diagonally adjacent pixels. Therefore it would have been obvious to one of ordinary skill I the art to add image in a diagonal direction to determine the relationship among the pixels.

With regard to claim 17, the discussion of claim 7 applies.

9. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of U.S. Patent 5,027,423 to Kawata et al. and U.S. Patent 6,536,632 to Park et al.

With regard to claim 21, Kawata discloses the system comprising: a first set of adders to add together rows and to add together columns of image data; and a second set of adders and a first set of multipliers to calculate filters (see Abstract and Fig. 9, elements 11, 12, and 13). Kawata does not disclose calculating at least two different filter sizes from said image data. Park discloses calculating filters of different sizes and teaches that it is advantageous to compute filters for various sizes depending on the nature of the image for which a filter is being calculated (see Abstract). Kawata only discloses the filtering apparatus for 5x5 sub-blocks. Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to use multiple filters of different sizes as taught by Park in the apparatus of Kawata in order to determine an appropriate filter for the particular image segment being filtered.

With regard to claim 22, Park discloses progressively calculating filters from smaller to larger sizes (Fig. 6, elements K1-K4).

10. Claims 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of U.S. Patent 5,027,423 to Kawata et al. and U.S. Patent 6,536,632 to Park et al. and further in view of U.S. Patent 5,351,312 to Sato.

With regard to claim 23, Kawata and Park disclose the system of claim 22. They do not disclose utilizing the results from said second set of adders and first set of multipliers for one filter size, when calculating a filter of a larger of a larger size. Sato discloses reusing the results of the additions and multiplications (column 7, lines 30-35). Here Sato discloses calculating a filtered pixel value and image signal and then shifting the filter to the next pixel of interest. The result of the adding and multiplication is therefore used in the subsequent filter calculation. Park discloses calculating filters of different sizes and Kawata discloses the adder and multiplier method. It would be advantageous to change the size of the filter while retaining the calculations of multiplying and adding from the previous filter calculation to maintain continuity between filtering operations. Therefore it would have been obvious to one of ordinary skill in the art to retain the calculations of one filter when calculating a new filter of another size as taught by Sato to maintain continuity and decrease processing time in the method of filter calculation of Park and Kawata.

With regard to claim 24, Kawata discloses the system including a state machine that controls the operation of said first and second adders and said first set of multipliers (column 5, lines 5-15). Here Kawata discloses shift registers that increment calculations and coefficient outputs. Here a state machine is inherent in this kind of digital circuit.

With regard to claim 25, Kawata and Park disclose a system as claimed. Kawata discloses a second set of adders. Kawata does not disclose using the second set of adders to add image data along diagonals. Sato discloses adding pixel values along diagonals (column 7, lines 25-30). Adding pixels along a diagonal would be helpful in determining the relationship between the diagonally adjacent pixels. Therefore it would have been obvious to one of ordinary skill I the art to add image in a diagonal direction to determine the relationship among the pixels.

Contact Information

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to WESLEY TUCKER whose telephone number is (571)272-7427. The examiner can normally be reached on 9am-5pm Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vikkram Bali can be reached on (571)272-7415. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/WESLEY TUCKER/
Primary Examiner, Art Unit 2624